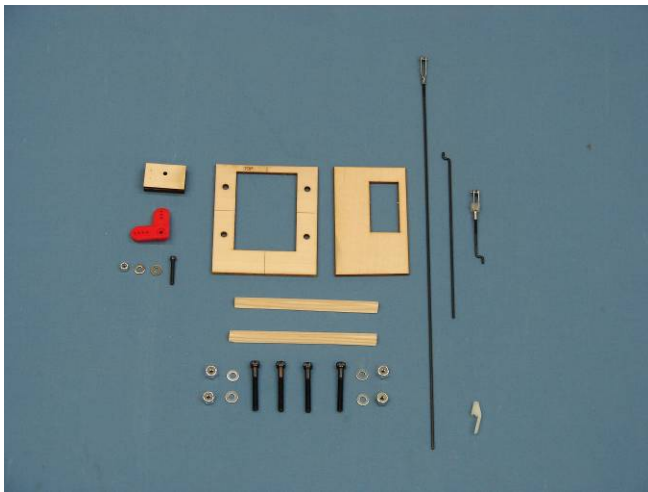


60-90 EXTRA 260/300 DLE 20 INSTALLATION GUIDE

This engine installation addendum will outline the installation of the new DLE 20cc in the 60-90 Extra 260 and Extra 300. The Extra 300 is shown however the Extra 260 installation will be very similar.

Gather the conversion kit items as shown below:

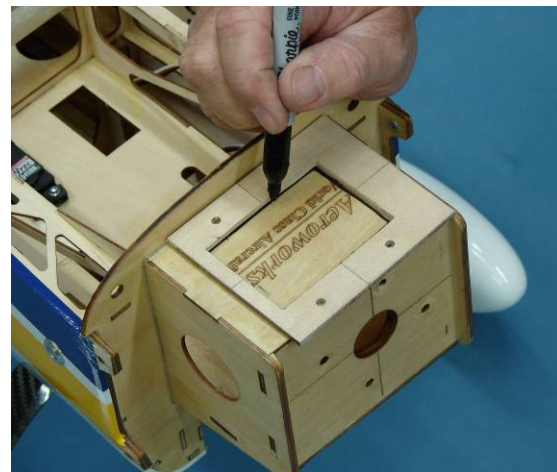
- ◇ 1 - 2-56 throttle servo pushrod with metal clevis
- ◇ 2 - 2-56 choke pushrods with pre-bent Z bends
- ◇ 1 - 2-56 Metal clevis
- ◇ 1 - Nylon pushrod keeper
- ◇ 1 - Bell crank assembly
- ◇ 4 - 8-32 Mounting bolts
- ◇ 4 - 8-32 Flat washers
- ◇ 4 - 8-32 Lock nuts
- ◇ 2 - Pieces of hard wood tri-stock
- ◇ 1 - Engine mounting template
- ◇ 1 - Throttle servo mounting plate



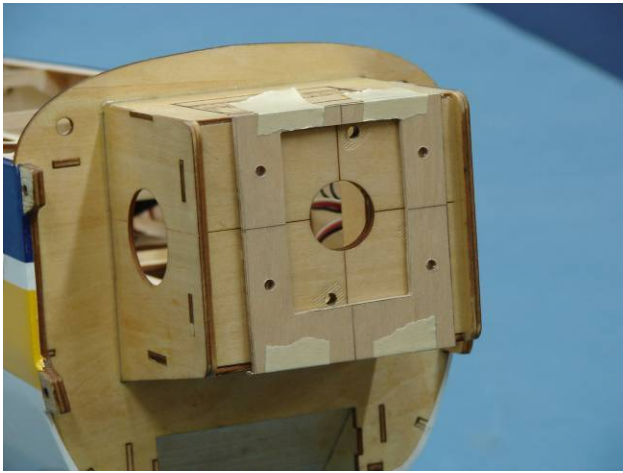
1. Use one 6-32 bolt threaded into the preinstalled blind nuts and a hammer to lightly tap the blind nuts loose. It is important to work slowly and not to damage the firewall during this step.



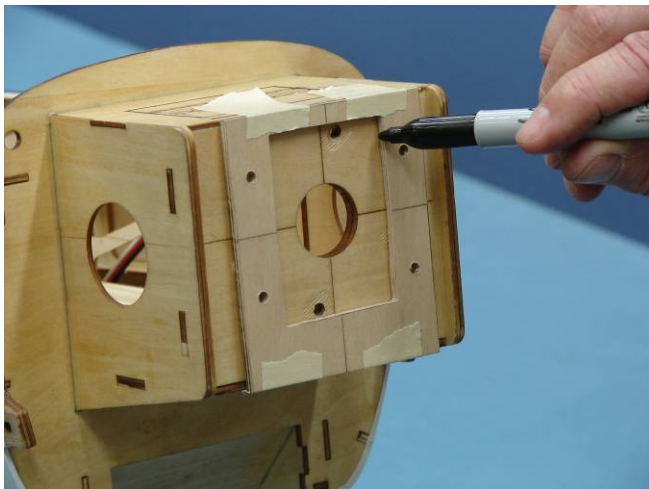
2. Place the engine mounting template on top of the motor box. Line up the center thrust line and mark the cut location shown below. This area will be cut out as shown in step #6.



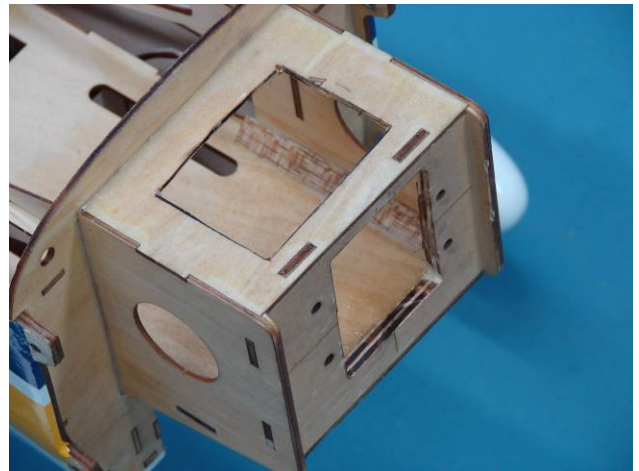
3. Align mounting template with laser etched thrust lines on firewall and tape in place.
4. Use an electric drill to drill the four new motor mounting holes in the firewall.



5. Use a marker to mark the area inside the template, this area will allow the carb to pass through the firewall.



6. Use a rotary cutting tool with a cutting disc to remove both the top of the motor box and firewall area marked in a previous step.



7. Pass a 6-32 mounting bolt with a washer through the firewall. Attach the mounting bolt to a 6-32 blind nut and begin tightening the mounting bolt. Pull the blind nut all the way into the backside of the firewall and repeat for the 3 remaining blind nuts.



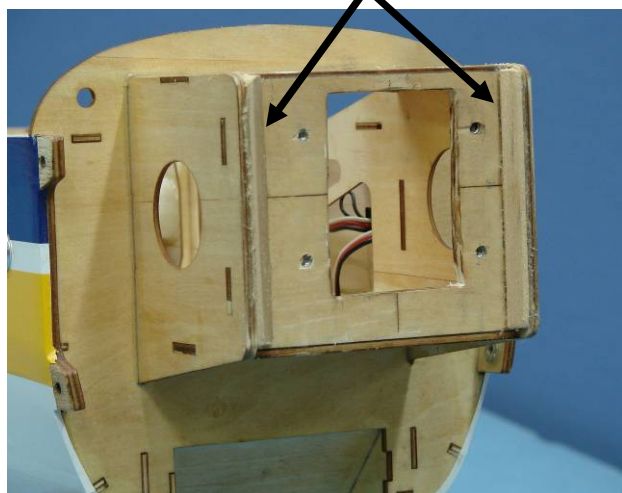
8. Mix 5 minute epoxy in a small mixing cup and spread an even amount over two sides of the tri-stock as shown below.



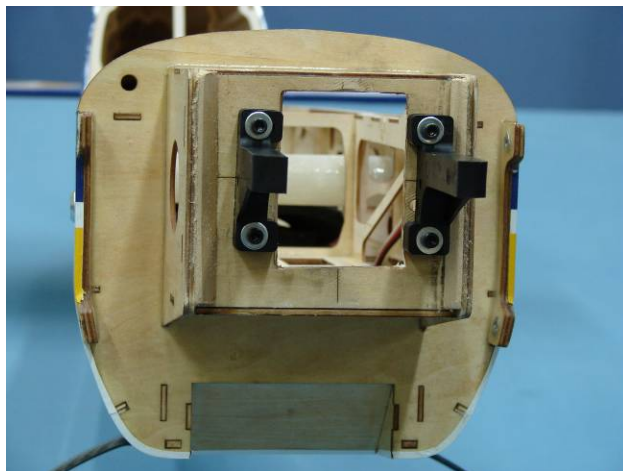
9. Glue the tri-stock to the firewall as shown below. Allow epoxy to fully cure before moving on to the next step.

Note: This step only applies to the Extra 300.

**Glue tri-stock to
the areas shown.**



10. Install engine mounting rails using the 6-32 bolts, flat washers, and split lock washers that are supplied with you kit.



11. Gather the motor and phenolic carburetor arm extension with mounting screw as shown below. These items are included with the DLE 20.

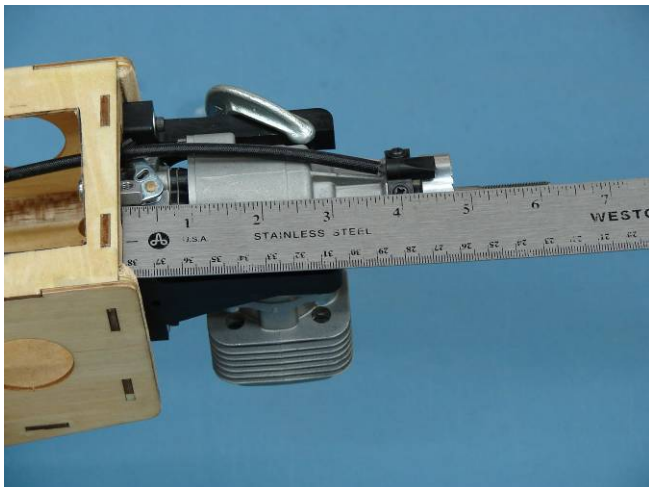


12. Attach the extension arm to the carb as shown below. Use blue loctite on the mounting screws to ensure they do not come loose from vibration.

Note: It may be necessary to rotate the throttle arm 180 degrees from its stock position before attaching the extension arm.

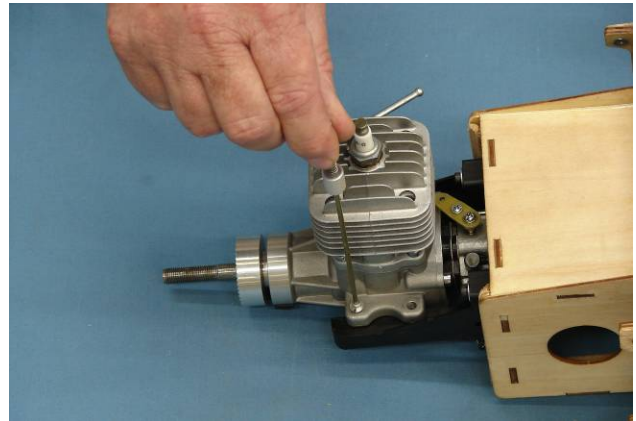


13. Set the engine in the mounting rails. It may be necessary to clamp the engine in place for the next few steps.
14. Adjust the engine position until the thrust washer is $4 \frac{3}{4}$ " away from the firewall.



15. Mark the position of the engine mounting holes on the engine mount. Mark the center of each engine mounting hole with a center marking tool or beveled pencil or pen. Ensure the mark is in the center of the engine mounting hole.

Note: We recommend the Great Planes Dead Center Engine Mount Hole Locator Part #GPMR8130



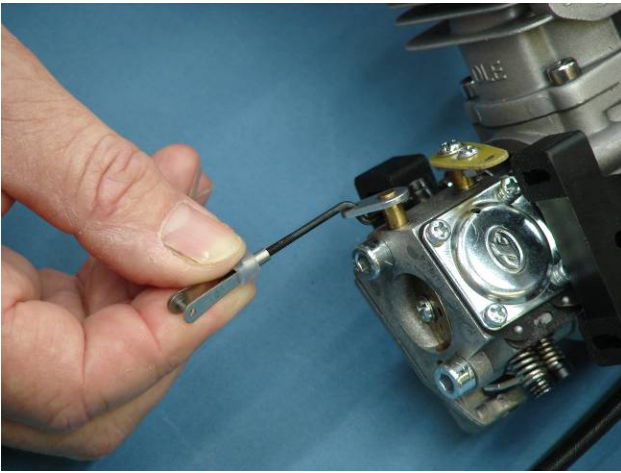
16. Remove the motor mount from the fuselage. Use a $\frac{5}{32}$ " drill bit to drill the engine mounting holes into the engine mount.

Note: Drill the engine mounting holes as straight as possible. Use a drill press if available.

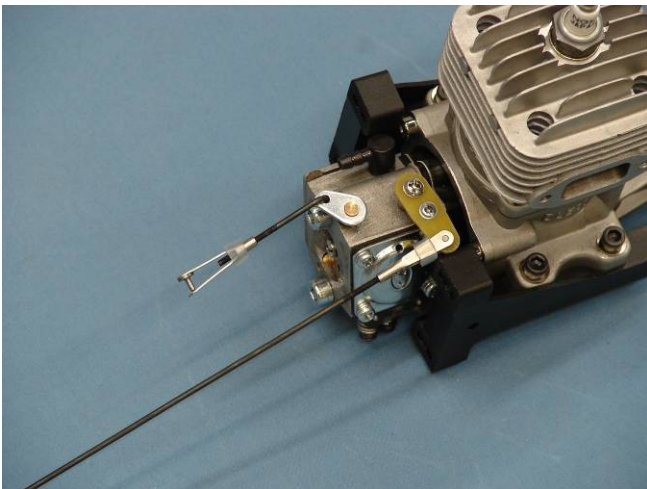
17. Use four 8-32 bolts, four flat washers, and four 8-32 lock nuts supplied with this installation kit to install the engine to the mount.



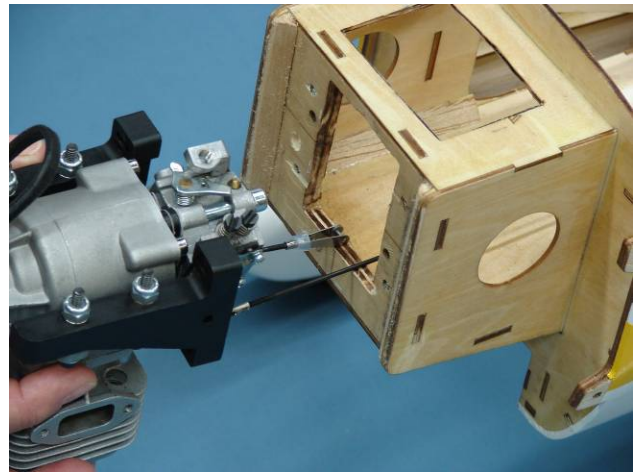
18. Attach the short choke pushrod to the choke arm using the “Z” bend end of the pushrod as shown below.



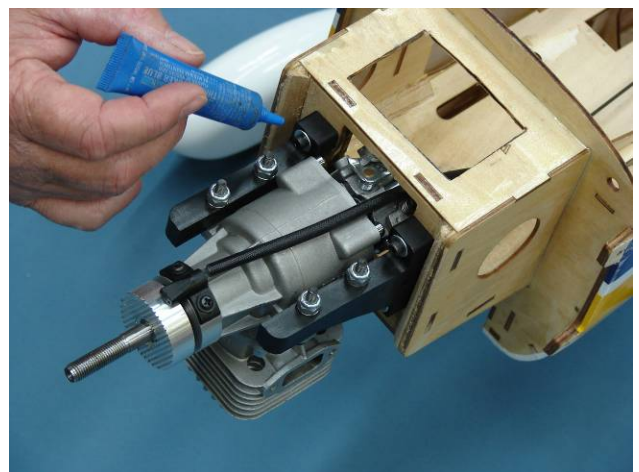
19. Attach the throttle pushrod to the phenolic arm as shown. Use a piece of fuel tubing around the metal clevis to ensure it does not come loose from vibration.



20. Slide the choke and throttle pushrods through the hole cut in the firewall as shown.

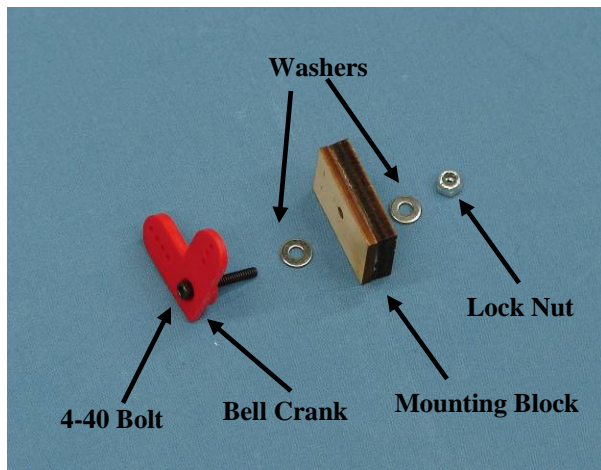


21. Reinstall the engine mounts as shown below. Use blue loctite to ensure the mounting bolts do not come loose from vibration.



Choke Bell Crank Assembly

1. Gather the choke bell crank assembly parts as shown below. It is important to assemble the bell crank as shown.



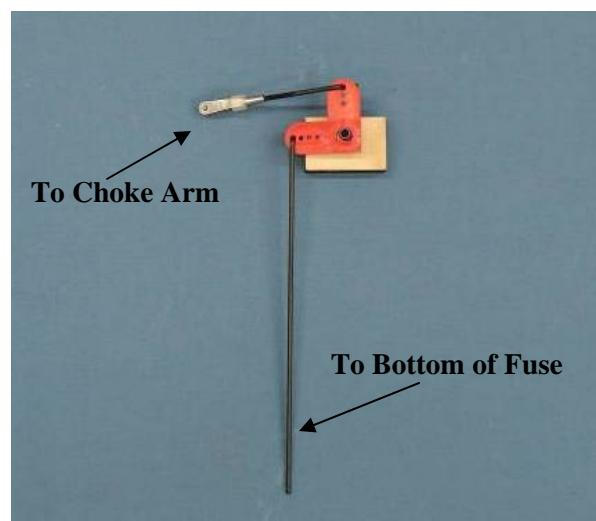
2. Ensure that the hole in the bell crank mount is towards the top as shown. The mount will not work if it is assembled upside down.



3. Bolt the bell crank assembly to the bell crank mounting block as shown.

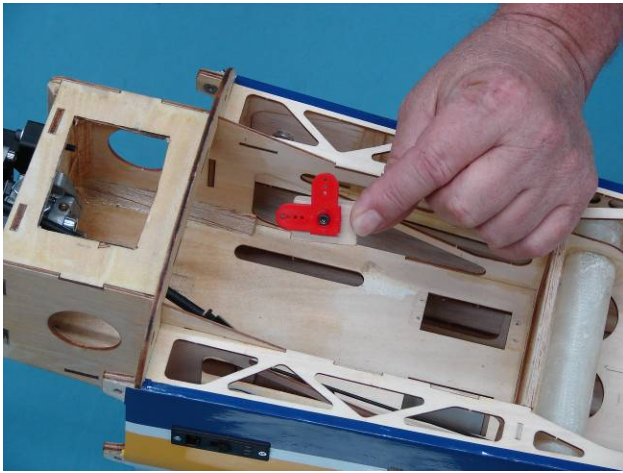


4. Bell crank shown with pushrods attached for reference only. Do not attach pushrods at this time.

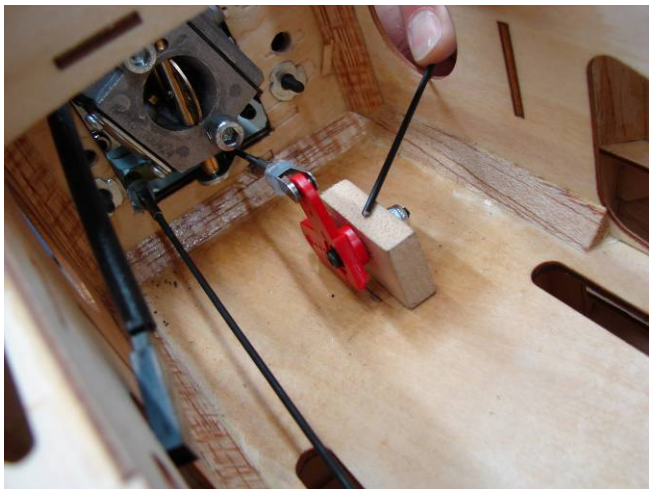


Manual Choke Installation

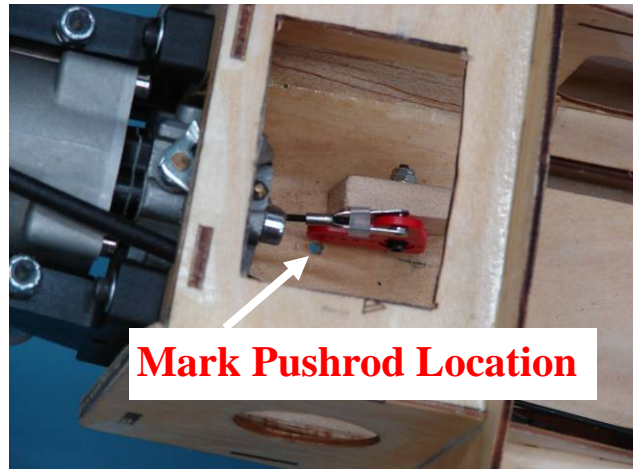
1. Locate the choke bell crank that was assembled in the previous steps. Install bell crank assembly onto fuselage floor as shown with one arm facing forward and the other arm to the top.



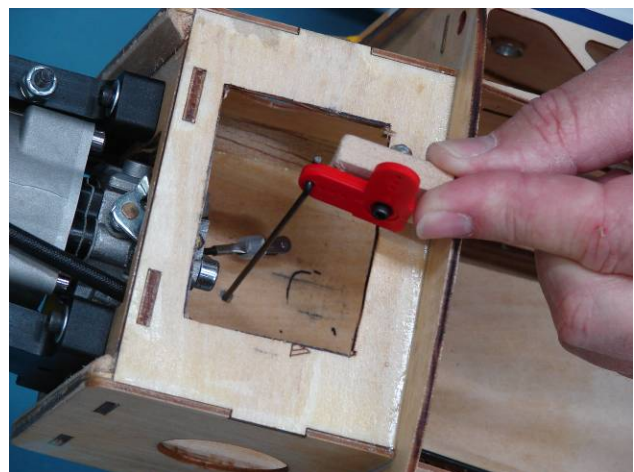
2. To help with alignment of block attach the pushrod to the vertical portion of the bell crank as shown below.



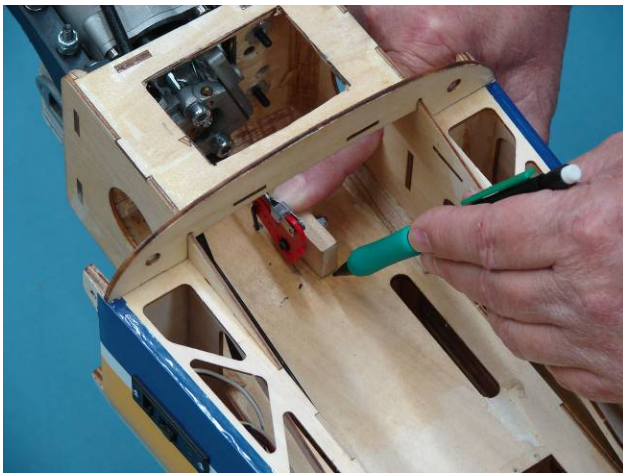
3. Mark and drill hole for long choke pushrod location.



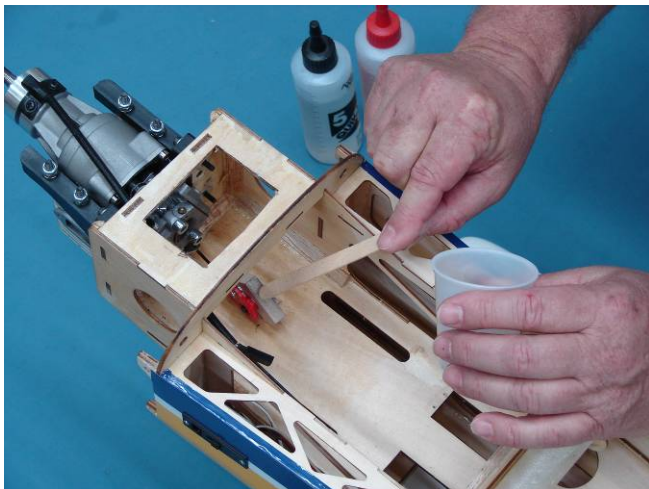
4. Unhook the clevis from the bell crank and install the long pushrod to the bottom portion of the bell crank using the pre-bent "Z" bend. Drop pushrod through hole.



5. Reinstall the short pushrod attached to the carb to the bell crank and place the bell crank mounting block in the fuse. Using a pencil, mark the location of the mounting block as shown.



6. Use 5 minute epoxy to glue the bell crank mounting block to the floor of the fuse as shown.



7. Allow the epoxy to fully cure before moving on to the throttle servo installation. Use tri-stock to reinforce mount.



Throttle Servo Installation

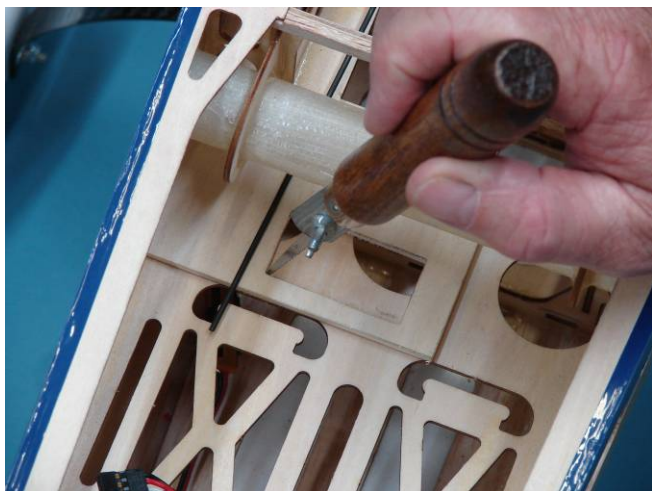
1. Locate the throttle servo mounting tray as shown. Mix 5 minute epoxy in a small mixing cup and evenly spread the epoxy over the bottom of the throttle servo mounting tray as shown.



2. Place the throttle servo mounting plate in the fuse as shown. It should be located on the left side of the fuse with the servo opening near the center of the fuse.



3. Use a small saw to remove the wood under the throttle servo mounting hole as shown.



4. Mount the throttle servo in the fuse and use the nylon pushrod keeper to attach the pushrod to the servo arm.

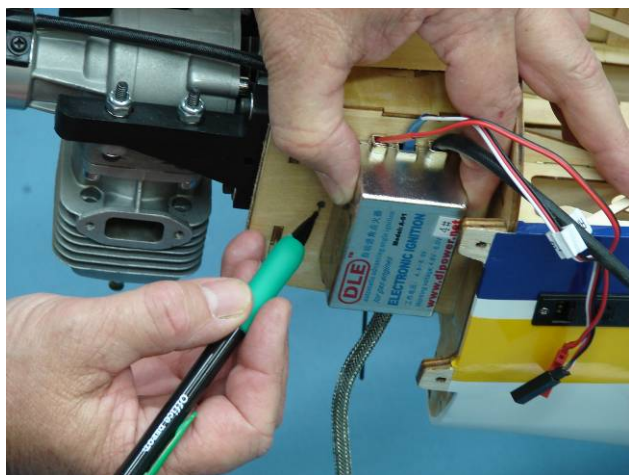


Ignition Installation

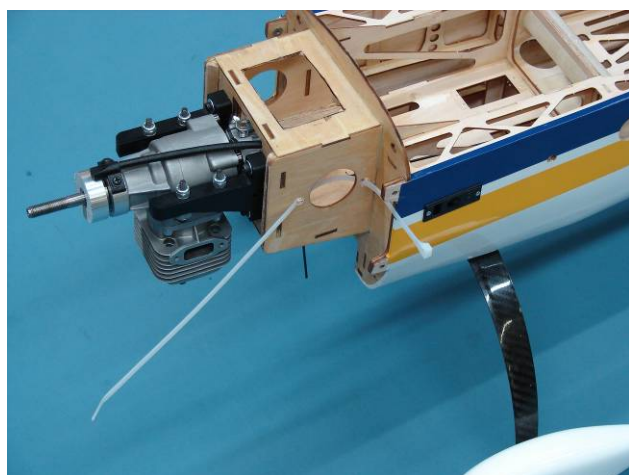
1. The Aeroworks ignition power system (Available Separately) is recommended to power the DLE 20 ignition. The ignition power system includes the following items:
 - ◇ 1 - Fromeco 2600mah Li-Ion Battery w/ Universal Connector
 - ◇ 1 - Smart-Fly Ignition Regulator
 - ◇ 1 - MPI charge switch



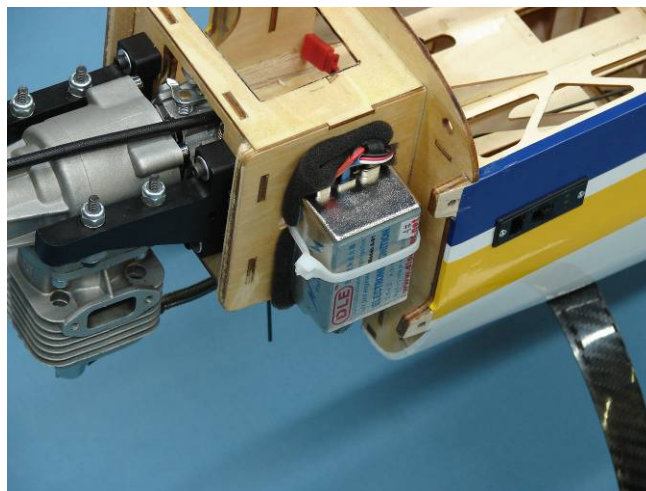
2. Position the ignition module on the side of the engine box and mark the location for the nylon tie holes as shown.



3. Use a 1/4" bit to drill the ignition module mounting holes.
4. Thread nylon tie through mounting holes.



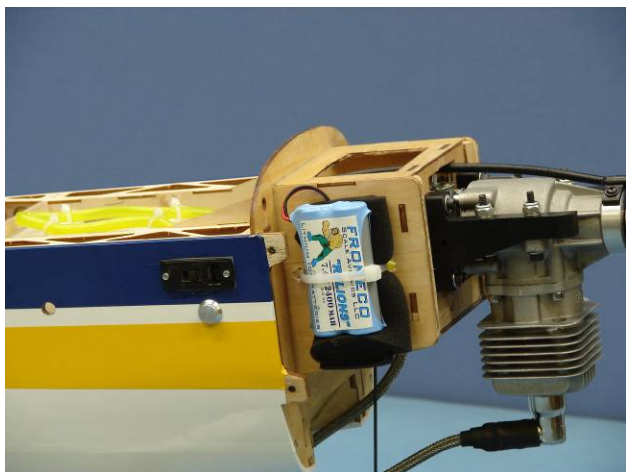
5. Mount the engine ignition module using nylon tie and foam rubber as shown.



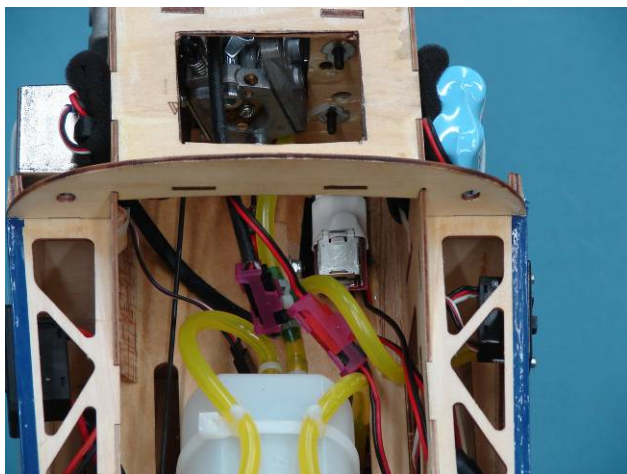
6. Mount switch in accordance with the switch manufacturers instructions and hardware.



7. Mount ignition battery on opposite engine box side with nylon tie and foam padding.



8. Mount ignition regulator as desired. Secure all connectors with tape, safety clip or similar.

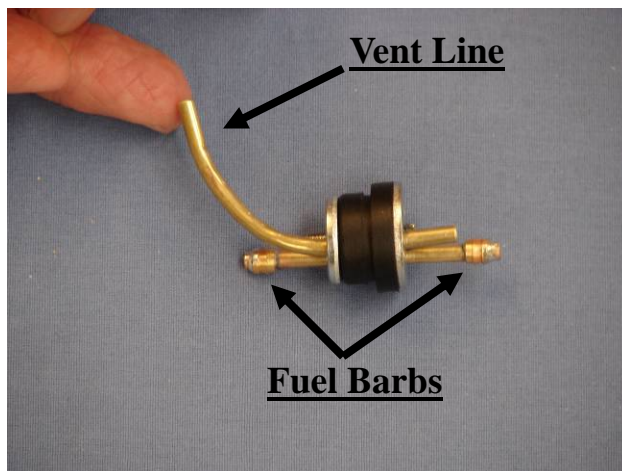


Fuel Tank Installation

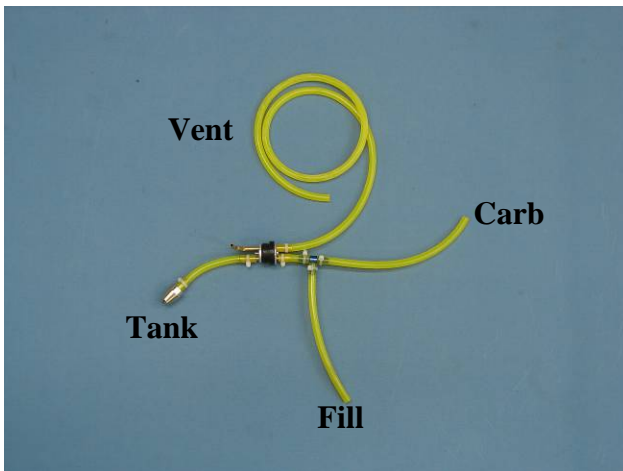
1. Gather the fuel tank assembly (**Available Separately**) as shown below:
 - ◇ 1 - 8oz fuel tank
 - ◇ 1 - Fuel tank stopper
 - ◇ 2 - Aluminum stopper mounts with screw
 - ◇ 1 - Fuel clunk
 - ◇ 2 - Fuel barbs
 - ◇ 3' - Large fuel tubing
 - ◇ 1 - Aeroworks fuel "T"



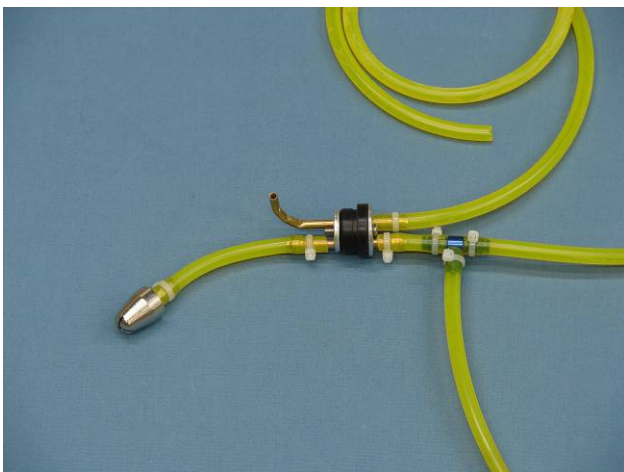
2. Assemble the fuel tank stopper as shown below. Ensure that the fuel barbs are soldered onto both sides of the pick up line.



3. Attach the fuel tubing to the brass tubes as shown. Use a nylon zip tie to keep them from coming loose.



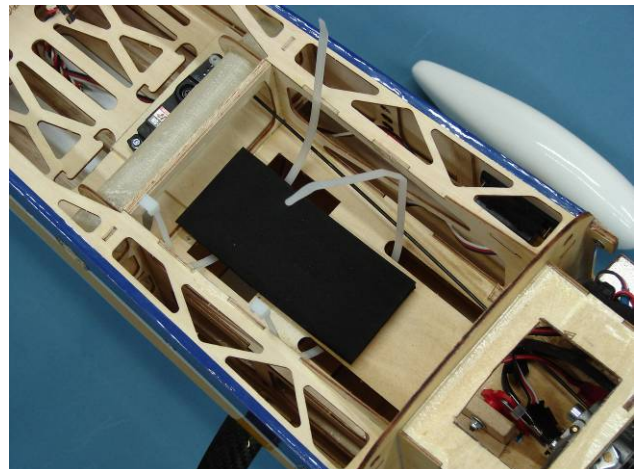
4. Detailed view of fuel tank stopper shown below. The Fuel "T" goes in line with the fuel line going to the carburetor. The over fill line will run out the bottom of the airplane. It is important to keep the overflow line long until it has been installed in the fuse.



5. Insert the rubber stopper assembly into the tank with the vent tube at the top of the tank.
6. Secure the rubber stopper with set screw. Take care not to strip threads by over tightening set screw.

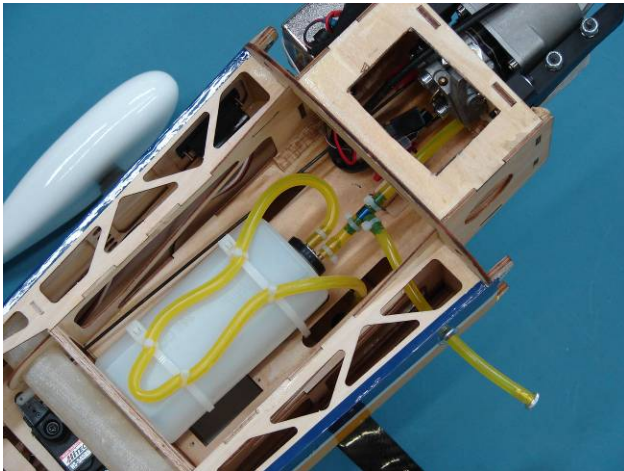


7. Install nylon ties and foam rubber pad, supplied with the airplane, for fuel tank to rest on. Foam rubber will help prevent fuel from foaming or getting air bubbles from engine vibration



8. Install the tank. Run the fuel pick up line to the engine. Secure the tank with the two long nylon ties trim away any excess nylon tie as shown.

Note: we recommend looping the vent line on top of the tank to prevent fuel from draining out.



9. Install fuel dot using the same method as described in the manual.



10. Using a rubber grommet allow the vent line to pass through the bottom of the fuse.

Note: Use a nylon tie to prevent the vent line from slipping up into the fuse. Do not over tighten the tie as this could crush the vent line.



11. Finished DLE Engine installation shown below.

